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09/548,913	04/13/2000	Brian Mitchell Bass	RAL920000018US1	7379

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EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT	PAPER NUMBER
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2195

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/548,913

Applicant(s)

BASS ET AL.

Examiner

Lewis A. Bullock, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 2, 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 further states limitations of "if the new position that would be presently assigned **is earlier than** the previously calculated, initial new position, assigning the previously calculated, initial new position to the queue, if the previously calculated initial new position **is not earlier than** the new position that would be assigned, assigning the new position that would be presently assigned to the queue..". The two limitations mean the exact same thing but achieve different results, which thereby generated the 112 rejections herein. For instance, let's assume variable A having a date of June 1 is the previously calculated position and variable B having a date of March 1 is the newly calculated position. Based on the first comparison if B is < (earlier than) A, hence March 1 < June 1, then the position is June 1 (the previously calculated position). Based on the second comparison if A !< (not earlier) B, hence June 1 is not earlier than March 1, then the position is March 1. The opposite of earlier (e.g. not earlier), is later. Therefore, the second comparison is determining if A is later than B which is the same as determining that B is earlier than A.
2. Claims 2, 7 and 8 recite the limitation "the time pointer of the time based calendar points to the location" in the amended portion of the claims. There is insufficient antecedent basis for this limitation in the claim. The cited claims never distinguished

that the (1) a time pointer existed, (2) the calendar is a time based calendar, or (3) that the queue was in a location, the claims used position.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 2, 7-11 are rejected under 35 U.S.C. 102(e) as being anticipated by NAVEN (U.S. Patent 6,810,043).

As to claim 2, NAVEN teaches a method of servicing data flows (cell transmissions) placed into a queue (virtual connection queues) for service in turn comprising: calculating an initial new position in a calendar for a queue containing a service flow (next scheduled time (NST) (col. 10, lines 20-31); determining whether the queue had a previous position in the calendar and whether an initial new position was previously calculated for the queue (via if there is a calculated NST for the queue); if the queue had a previous position in the calendar, determining whether a new position that would be presently assigned to the queue is earlier than the initial new position previously calculated in the calendar; if the new position that would be presently assigned is earlier than the previously-calculated initial new position, assigning the

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previously-calculated initial new position to the queue (via determining that the current time is before the scheduled time such that the queue is assigned to executed at the scheduled time); if the previously calculated initial new position is not earlier than the new position that would be assigned, assigning the new position that would be presently assigned to the queue (via if the calculated NST for the VC has passed the current time, scheduling the execution of the VC at the current time +1) and automatically servicing the data flows of the queue by causing a frame consisting of information units to be transmitted from the queue to an output destination when the time pointer of the time based calendar points to the location at which the queue is currently located (via calendar control circuitry waits until the T pointer reaches the storage location before servicing the entries at that location) (col. 8, lines 49-55) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29; See also column 3, line 41 – col. 4, line 3; col. 7, lines 1-26; col. 11, lines 12-25; col. 14, lines 4-29; col. 6, lines 9-27).

As to claim 7, NAVEN teaches attaching the queue to the selected location (via scheduling the queue at the next scheduled time) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29; See also column 3, line 41 – col. 4, line 3; col. 7, lines 1-26; col. 11, lines 12-25; col. 14, lines 4-29; col. 6, lines 9-27).

As to claim 8, NAVEN teaches the stored information includes time stamps (scheduled time) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines

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1-29; See also column 3, line 41 – col. 4, line 3; col. 7, lines 1-26; col. 11, lines 12-25; col. 14, lines 4-29; col. 6, lines 9-27).

As to claim 9, NAVEN teaches a system comprising: a time-based calendar which handles a first set of a plurality of information units based on the information stored about a plurality of sources (master / slave calendars) (via a calendar control circuitry scheduling on a master/slave calendars for a plurality of virtual connections); and a mechanism for determining when a flow (cell transmission) is added to the source (virtual connection queue) whether that source was previously at a first location in the time-based calendar (current location / T pointer) and would have been assigned a previously calculated location of lower time priority and (b) when the source would have been assigned a previously calculated location (via the calendar control circuitry assigns locations in the calendar based on the priority and NST) then (1) preventing the source from being placed at a second location that is ahead of the previously-calculated location in the time-based calendar (via calculating a NST for the VC and scheduling the execution of the VC at the NST unless the NST has passed in which case it is placed at the current time +1) and (2) placing the source at a third location from among the previously-calculated location or a next location that is after the previously-calculated location within the time-based calendar and means for automatically servicing the source by causing a frame consisting of information units to be transmitted from the source to an output destination when the time pointer of the time based calendar points to the third location at which the source is currently located (via calendar control circuitry

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waits until the T pointer reaches the storage location before servicing the entries at that location) (col. 8, lines 49-55) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29).

As to claim 10, NAVEN teaches a method comprising: providing at least one time based calendar (master calendar / slave calendar) having a plurality of locations and a time pointer (T pointer) moving relative to the plurality of locations as a result of scheduler ticks, each tick measured as a predetermined ratio of elapse time per pre-set number of bytes (via the time pointer is incremented in every cell period and a cell period relates to transfer bytes over a virtual connection); attaching a queue (virtual connection queue) to a first calendar location whereat the time pointer is pointing (current time); servicing the queue by causing a frame to be transmitted from the queue whereupon the queue goes empty (via processing an entry of the queue for transmission); identifying a second location whereat the queue would have been re-attached had the queue not gone empty (via calculating the NST for the queue); examining pre-defined characteristics associated with the queue to determine occupancy frames within the queue (determining whether the queue is empty); if examination indicates the queue is not empty, identifying a current location whereat the time pointer points (identify current time); correlating the current location of the time pointer and the second location (determining whether the NST has exceeded the current time); selecting allocation which is not earlier than the second location to re-attach the queue, wherein when the current location of the time pointer is not earlier

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than the second location, the queue is reattached at the current location of the time pointer (via if the NST has exceeded the current time then reschedule the queue at the current time + 1) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29; See also column 3, line 41 – col. 4, line 3; col. 7, lines 1-26; col. 11, lines 12-25; col. 14, lines 4-29; col. 6, lines 9-27) and automatically servicing a data flow of the queue by causing a frame consisting of information units to be transmitted from the queue to an output destination when the time pointer of the time based calendar points to the location at which the queue is currently attached (via calendar control circuitry waits until the T pointer reaches the storage location before servicing the entries at that location) (col. 8, lines 49-55).

As to claim 11, NAVEN teaches the un-empty queue is attached at the selected location (via attaching a queue at a location based on the current time or NST) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29; See also column 3, line 41 – col. 4, line 3; col. 7, lines 1-26; col. 11, lines 12-25; col. 14, lines 4-29; col. 6, lines 9-27).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAVEN (U.S. Patent 6,810,043).

As to claims 12 and 13, NAVEN teaches the queue is attached by writing the I.D. of the queue (VC control block that is associated with the virtual connection and its queue) in a linked list located at each location (col. 7, lines 1-42). However, NAVEN does not teach that the linked list is a stack. Official Notice is taken in that it is well known in the art that a linked list is a stack and can function in a LIFO format and therefore would be obvious to one of ordinary skill in the art in relation to the teachings of NAVEN in order to organizing the execution of the virtual connections at a calendar location.

7. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (APA) in view of NAVEN (U.S. Patent 6,810,043).

As to claim 1, APA teaches a system comprising a time-independent calendar which handles scheduling of a set of information units wherein the time-independent calendar handling the scheduling of the set based on information stored about the plurality of sources and which places each source into a calendar location and moves the source to a different place in the calendar of lower priority relative to a current calendar location of the source after servicing the source (via the system having a weighted priority technique or priority technique of servicing queues) (pg. 7, lines 3-19). However, APA does not teach a time-based calendar and mechanism for using the time based calendar.

NAVEN teaches a system comprising: a time-based calendar which handles a first set of a plurality of information units based on the information stored about a plurality of sources (master / slave calendars) (via a calendar control circuitry scheduling on a master/slave calendars for a plurality of virtual connections); and a mechanism for (a) determining when a flow (cell transmission) is added to the source (virtual connection queue) whether that source was previously at a first location in the time-based calendar (current location / T pointer) and would have been assigned a previously-calculated location of lower time priority and (b) when the source would have been assigned a previously calculated location, then (1) preventing the source from being placed at a second location that is ahead of the previously-calculated location in the time-based calendar (via calculating a NST for the VC and scheduling the execution of the VC at the NST unless the NST has passed in which case it is placed at the current time +1) and (2) placing the source at a third location from among the previously-calculated location or a next location that is after the previously-calculated location within the time-based calendar (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29) and means for servicing the source by causing a frame consisting of information units to be transmitted from the source to the output destination when a pointer of the time based calendar points to the location at which the source is currently located (via calendar control circuitry waits until the T pointer reaches the storage location before servicing the entries at that location) (col. 8, lines 49-55). It would be obvious to one of ordinary skill in the art that the different calendars operate independent of one another such that the operation of the time-based calendar

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has no relation to the operation of the time-independent calendar. Therefore, it would be obvious to one of ordinary skill in the art to combine the teachings of APA with the teachings of NAVEN in order to facilitate a system having a combination of different scheduling techniques (APA pg. 7, lines 9-12) wherein entries (virtual connections) are handled without excessive power and/or storage capacity (Naven, col. 3, lines 35-38).

As to claim 5, NAVEN teaches the plurality of sources include a plurality of queues (virtual connection queues) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29; See also column 3, line 41 – col. 4, line 3; col. 7, lines 1-26; col. 11, lines 12-25; col. 14, lines 4-29; col. 6, lines 9-27).

As to claim 6, NAVEN teaches the calculated location includes the location whereat the queue would have been attached upstream from the location whereat the queue was last serviced (next scheduled time) (col. 9, lines 10-64; col. 10, lines 1-65; col. 8, lines 56-67; col. 5, lines 1-29; See also column 3, line 41 – col. 4, line 3; col. 7, lines 1-26; col. 11, lines 12-25; col. 14, lines 4-29; col. 6, lines 9-27).

Response to Arguments

8. Applicant's arguments with respect to claims 1, 2 and 5-13, filed September 28, 2006 have been fully considered but they are not persuasive. Applicant relied upon the same rational provided to indicate that claims 1, 5, 6 and 9-13 should be allowable also.

However, these claims do not correlate in scope to claims 2, 7 and 8 and therefore are distinct from them. Claim 2, details calculating an initial new position in a calendar for a queue, determining whether the queue had a previous position in the calendar and an initial new position that was previously calculated for the queue, and if the queue had a previous position in the calendar, determining whether a new position that would be presently assigned to the queue is earlier than the initial new position previously calculated in the calendar; such that if the presently calculated new position is earlier than the previously calculated new position assigning the queue to the previously calculated new position; if the previously calculated initial new position is not earlier than the new position that would be assigned assigning the queue to the presently assigned position; and automatically servicing the data flows by causing a frame to be transmitted when the time pointer of the time-based calendar points to the location at which the queue is currently located. Claim 10 is the next closest claim but does not perform the comparisons and subsequent actions based on the comparisons of one previously calculated new position being earlier than a presently calculated new position assuming that the current time pointer is the calculated new position. Claim 10 broadly states correlating the current location of the time pointer and the second location and selecting a location with is not earlier than the second location to re-attach the queue. The examiner would have no reason to believe that the comparison of claim 2 is similarly performed in claim 10. The same rational is applied to claims 1 and 9 and there dependent claims.

As stated above, Claim 2 states limitations of "if the new position that would be presently assigned **is earlier than** the previously calculated, initial new position, assigning the previously calculated, initial new position to the queue, if the previously calculated initial new position **is not earlier than** the new position that would be assigned, assigning the new position that would be presently assigned to the queue..". The two limitations mean the exact same thing but achieve different results, which thereby generated the 112 rejections above. For instance, let's assume variable A having a date of June 1 is the previously calculated position and variable B having a date of March 1 is the newly calculated position. Based on the first comparison if B is < (earlier than) A, hence March 1 < June 1, then the position is June 1 (the previously calculated position). Based on the second comparison if A !< (not earlier) B, hence June 1 is not earlier than March 1, then the position is March 1. The opposite of earlier (e.g. not earlier), is later. Therefore, the second comparison is determining if A is later than B which is the same as determining that B is earlier than A. The cited reference teaches not rescheduling and executing a virtual connections (queue) no earlier than the previously calculated time (col. 10, lines 35-50). If the previously calculated time is after the current time the previously calculated time is changed to the current time, so that the virtual connection is executed (col. 9, lines 24-29). Therefore, the cited reference teaches at least the language of claims 1 and 9 of, "(1) preventing the source from being placed at a second location that is ahead of the previously calculated location in the time-based calendar and (2) placing the source at a third location from among the previously calculated location or a next location that is after the previously

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calculated location within the time based calendar" because the language of the claims are met by the interpretation as provided above. The cited reference further teaches the language of claim 10 of "identifying a current location whereat the time pointer points; correlating the current location of the time pointer and the second location; selecting a location which is not earlier than the second location to re-attach the queue wherein when the current location of the time pointer is not earlier than the second location, the queue is reattached at the current location of the time pointer because the cited reference teaches rescheduling the virtual connection (queue) to a next scheduling time wherein the virtual connection is not executed until the time pointer is the same (correlated) to the next scheduling time, if the next scheduled time is before the time pointer the next scheduled time is changed to the current time of the time pointer thereby selecting the current location of the time pointer. In regards to claim 2, in conjunction with the 112 issues, the claims in the broadest sense is met. The cited references compares the current time period to the next scheduled time. If the current time is earlier than the next scheduled time (comparison 1) (hence the next scheduled time is ahead of the current time), the next scheduled time is selected (col. 10, lines 35-50). If the current time is later than the next scheduled time (possible comparison 2) (hence the next scheduled time is before the current time), the current time +1 is selected. The examiner suggest Applicant amend the claims to explain the relationship of the calculated time values. For instance a combination of claim 2 and 10, wherein the present new calculated scheduled time refers to the time when a frame is inserted in the queue, such that the comparison is between the time period when a frame is

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inserted into an empty queue and the previously scheduled next time period of when the queue should be reattached. In the present form claim 2, doesn't establish this relationship and claim 10 compares the current time to the previously calculated time, both of which can logically refer to the other and are met by the references cited. The remaining claims are met by the same comparison of the current time to the previously calculated time as explained herein.

Conclusion

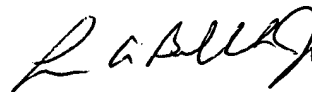
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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February 2, 2007


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER